Partner Reported Opportunities (PROs)
For Reducing Methane Emissions

Purge and Retire Low Pressure Gasholders

Compressors/Engines ☐
Dehydrators ☐
Pipelines ☐
Pneumatics/Controls ☐
Tanks ■
Valves ☐
Wells ☐
Other ☐

Applicable sector(s):

☐ Production ☐ Processing ■ Transmission and Distribution

Partners reporting this PRO: Keyspan Energy

Other related PROs: Eliminate Unnecessary Equipment and/or Systems, Consolidate Crude Oil Production and Water Storage Tanks

Technology/Practice Overview

Description

Natural gas is sometimes stored in large, above ground, inflatable storage "tanks" or gasholders. When these are taken out of service, the telescoping gasholder does not collapse completely, retaining a significant amount of low-pressure gas that must be purged, commonly to the atmosphere.

One partner reports venting retired gasholders through a thermal oxidizer to safely combust the methane containing gas to carbon dioxide. Portable thermal oxidizers are generally available, and efficiently oxidize hydrocarbon-air mixtures in a flameless, heated, packed bed reactor.

Methane Savings

500 Mcf/yr

Costs

Capital Costs (including installation)
None

Operating and Maintenance Costs (Annual)
☐ < $100 ☐ $100-$1,000 ■ > $1,000

Payback (Years)

None

Principal Benefits

Reducing methane emissions was:

☐ **A primary justification for the project** ■ **An associated benefit of the project**

Operating Requirements

Requires nitrogen and/or water to displace remaining gas in a collapsed gasholder. Also requires electricity, supplemental fuel gas and possibly a temporary operating permit for the thermal oxidizer.

Applicability

This practice is applicable to the decommissioning of all gasholders.

Methane Emission Reductions

The methane content of a collapsed gasholder is based on the inside dimensions of the tank with all lifts landed. The gas contents must be displaced with either nitrogen or water to avoid creating an explosive mixture within the gasholder, or imploding the thin-walled roof. One partner reported saving 500 Mcf of methane for each of three gasholders removed from service.

Economic Analysis

Basis for Costs and Savings

Methane emission reductions of 500 Mcf/yr apply to one 124-ft. diameter, four-lift, 50 ft. collapsed height oil-seal gasholder.

Discussion

Because the methane containing gas is combusted, rather than recovered as a product, there is no revenue generated. The costs of nitrogen and/or water, plus contracting a thermal oxidation service, including utilities and labor, would have to be justified by safety and environmental considerations. Economies of scale may be achieved in retiring multiple gasholders at one time: e.g. permitting, reuse of displacement water, site preparation and mobilization.